

Date: Tuesday, 08/04/2008 4:54:55 PM  
 User: Julie Lecocq

## Process Sheet

<b>Customer</b>	: CU-DAR001 Dart Helicopters Services		<b>Drawing Name</b>	: 350 SKIDTUBE EXTRUSION (BENT)	
<b>Job Number</b>	: 38463		<b>Part Number</b>	: D26003BENT	
<b>Estimate Number</b>	: 10997		<b>Drawing Number</b>	: D2600 D1/D2750 E	
<b>P.O. Number</b>	:		<b>Project Number</b>	: N/A	
<b>This Issue</b>	: 08/04/2008		<b>Drawing Revision</b>	: D1/E	
<b>Prsht Rev.</b>	: NC		<b>Material</b>	:	
<b>First Issue</b>	: / /		<b>Due Date</b>	: 30/04/2008	
<b>Previous Run</b>	: 37858		<b>Qty:</b>	/12 Um: Each	
<b>Written By</b>	:				
<b>Checked &amp; Approved By</b>	: JD 08.4.09				
<b>Comment</b>	: Est. B02.11.28 Reformat KJ				

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	D26003120	Extrusion Round 3" 350	
		Comment: Qty.: 1.0000 Each(s)/Unit Total : 12.0000 Each(s) Extrusion Bent	
		Pick: Qty Part Number Description Batch	
		1 D2600-3 Extrusion B30682	EC 8-4-17 (31)
2.0	BENDING	BENDING MACHINE - SKIDTUBES	
			(Pb)
		Comment: BENDING MACHINE Deburr one end of extrusion Drill #30 pilot holes using DT8689 Open holes to 5/16" and deburr Bend using CNC bending machine as per program 2750.C and Folio FT003. Use 5/16 locator pin on buggy "A". Check fit to Jig DT8150	
3.0	QC5	INSPECT WORK TO CURRENT STEP	
		Comment: INSPECT WORK TO CURRENT STEP Inspect work to Step 6 Ensure fit to Jig DT8150	S 08/04/08 (30)
4.0	PACKAGING 1	PACKAGING RESOURCE #1	
		Comment: PACKAGING RESOURCE #1 Identify and Stock Location: LG (Skid tubes)	EC 8-4-18 (31)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2600-3-BENT PAR #: N/A Fault Category: Prod / Skid tube NCR: Yes No DQA:  Date: 08/04/23  
 QA: N/C Closed:  Date: 08/04/23

NCR: 38463		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08/04/18	1.0	1. tube was overbent in the Bendler. tube was under bend at first and Bendler operator tried to re-bend. First tube.	<input checked="" type="checkbox"/> DSKELZ	Scrap and Destroy and replace other <input checked="" type="checkbox"/> B# 30682	<input checked="" type="checkbox"/> 89-18	<input checked="" type="checkbox"/> 08/04/18	<input checked="" type="checkbox"/> DSKELZ	<input checked="" type="checkbox"/> 08/04/18
	2.0	Over bent by 1.5°						

NOTE: Date & initial all entries

Date: Tuesday, 08/04/2008 4:54:55 PM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE EXTRUSION (BENT)

Job Number: 38463

Part Number: D26003BENT

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 QC21

FINAL INSPECTION/W/O RELEASE



08/04/2008

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



UMF 08-04-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action      Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

DESIGN <i>DK</i>	DRAWN BY <i>DS</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>DS</i>	DRAWING NO. D2600	REV. D SHEET 1 OF 5
DATE 98.08.20		TITLE EXTRUSION	SCALE 1:1
A	97.01.21	NEW ISSUE	
B	97.09.09	CHANGE MATERIAL SPEC.	
C	98.04.16	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	
D	98.08.20	INCREASE MIN. UTS TO 40 KSI	
D1	01.04.17	ADD PART NUMBERS & DIE NUMBERS	+ GP

**RELEASED**  
98.08.25 DS
GENERAL NOTES

1. MATERIAL: 6061-T6 (QQ-A-200/8)

MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
 MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi  
 MINIMUM ELONGATION = 8 %

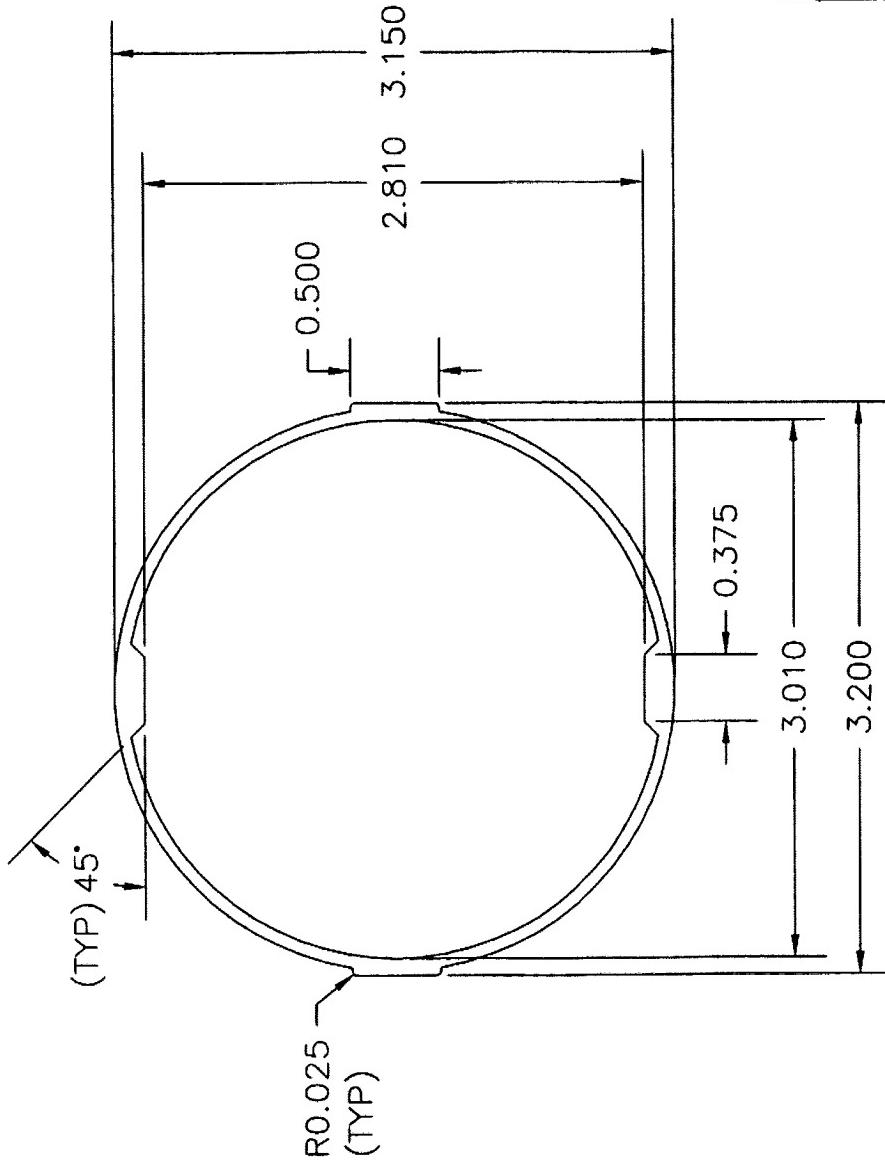
A SAMPLE FROM EACH BATCH WILL BE PULL TESTED  
 TO ASTM STANDARD B221 BY AN APPROVED TESTING  
 FACILITY TO ENSURE THAT THE BATCH MEETS THE  
 ABOVE MINIMUM MECHANICAL PROPERTIES.

2. BREAK ALL SHARP CORNERS 0.010 MAX.
3. NO TOOLING MARKS.
4. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE  
 NOTED.
5. ALL DIMENSIONS ARE IN INCHES.

SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 38163

**DART**

DESIGN <i>DKY</i>	DRAWN BY <i>JL</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>JL</i>	DRAWING NO. D2600	REV. D SHEET 2 OF 5
DATE 98.08.20		TITLE EXTRUSION	SCALE 1:1

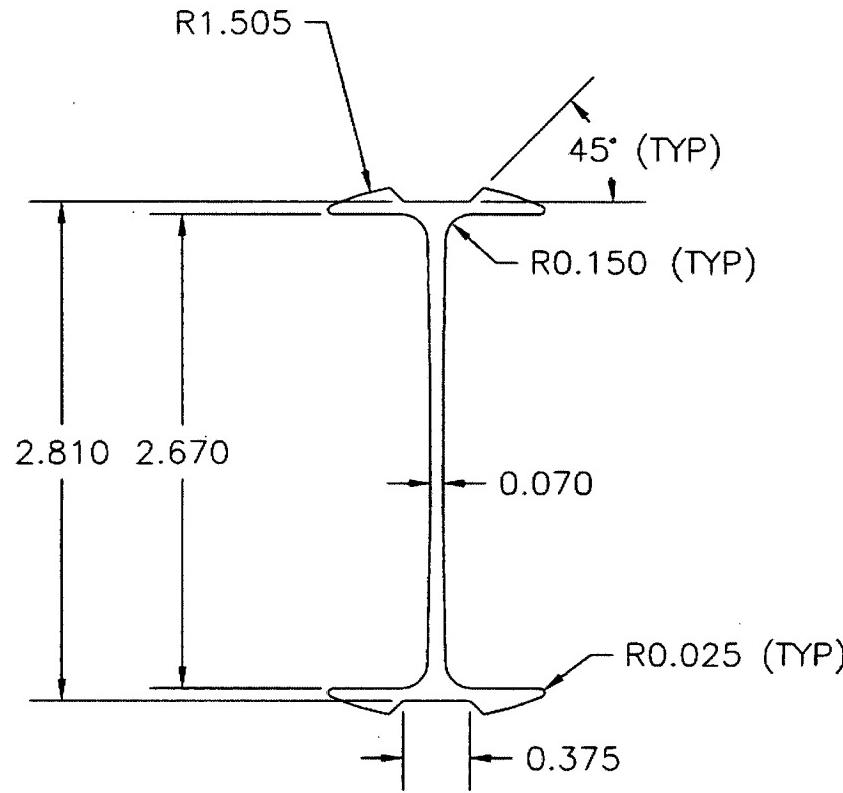
**RELEASED**  
98.8.25 DSD2600-1

MANUFACTURED WITH CARADON INDALEX DIE # MH-18870  
OR BON L DIE # 897121 (PREFERRED CHOICE)  
PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-1-160 IS 160" LONG)



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 2018



D2600-5

MANUFACTURED WITH CARADON INDALEX DIE # MS-18871

PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH IN INCHES  
(EG. D2600-5-108 IS 108" LONG)



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38463

**RELEASED**  
R 98.8.25. DS

**DART**



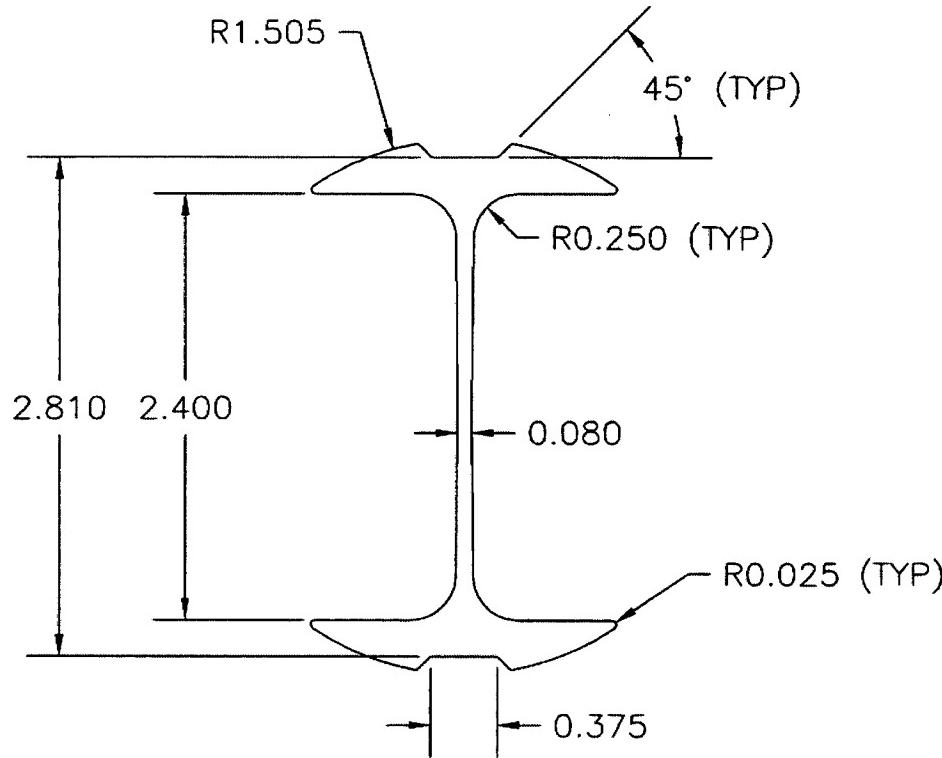
DESIGN	DRAWN BY	DART AEROSPACE LTD
98.8.25.	DS	HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.
LE	JL	D2600
DATE		TITLE
98.08.20		EXTRUSION
		REV. D
		SHEET 4 OF 5
		SCALE
		1:1

**DART**

DESIGN <i>M</i>	DRAWN <i>M</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED <i>RE</i>	APPROVED <i>J</i>	DRAWING NO. D2600
DATE 98.08.20	TITLE EXTRUSION	REV. D SHEET 5 OF 5 SCALE 1:1

**RELEASED**

98.8.25 DS

D2600-7

MANUFACTURED WITH CARADON INDALEX DIE # MS-18872  
PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH IN INCHES  
(EG. D2600-7-125 IS 125" LONG)



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38463

**DART**

DESIGN <i>PH</i>	DRAWN BY <i>CB</i>	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED <i>PH</i>	APPROVED <i>TH</i>	DRAWING NO. D2750	REV. E SHEET 1 OF 5
DATE 07.05.17	TITLE 350 SKIDTUBE ASSEMBLY		SCALE NTS
REV	DATE	DESCRIPTION	
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE MS24694-S293 TO AN8-16A	
C	98.11.18	ADD D2750-3 / D2750-4; INCORPORATE D2738 AND D2740	
D	06.01.05	ADD HOLES AND SPACERS FOR APICAL FLOATS INCORPORATE DEO 9133 / 9157	
E	07.05.17	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY(38) NAS1515H3L; REMOVE QTY(10) NAS1515H8L; REMOVE D2741, QTY(2) AN960C816; REMOVE QTY(2) MS21083C8	

**RELEASED**  
07.08.02 *[Signature]*

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D2750-041	SKIDTUBE ASSEMBLY, LH
	X			D2750-042	SKIDTUBE ASSEMBLY, RH
		X		D2750-043	SKIDTUBE ASSEMBLY, LH
			X	D2750-044	SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-13	WEARSHOE
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3535-35	WEARSHOE
1	1	1	1	D3536-13	GASKET
1	1	1	1	D3536-25	GASKET
1	1	1	1	D3536-35	GASKET
5	5	5	5	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
42	42	42	42	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
38	38	38	38	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN3C7A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
46	46	46	46	AN960C10L	WASHER
2	2	2	2	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER
2	2	2	2	NAS1515H8L	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38463

COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

**DART**

DESIGN <i>PH</i>	DRAWN BY <i>CB</i>	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA		
CHECKED <i>PH</i>	APPROVED <i>MM</i>	DRAWING NO. <b>D2750</b>	REV. E	SHEET 2 OF 5
DATE <b>07.05.17</b>		TITLE <b>350 SKIDTUBE ASSEMBLY</b>	SCALE NTS	

GENERAL NOTES:**RELEASED**  
*07-08-02*

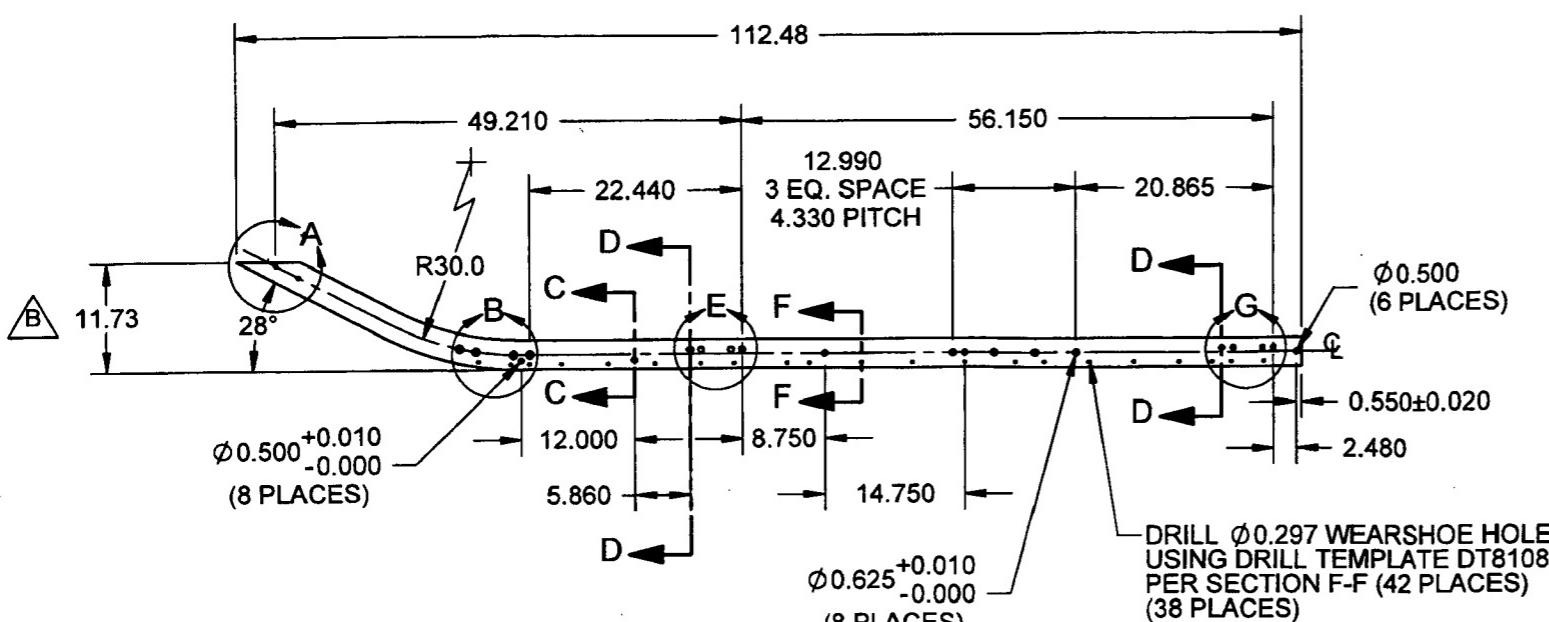
1. ALL DIMENSIONS ARE IN INCHES.
2. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
3. MAKE FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
4. DAMAGE TOLERANCE ON BENDING:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 12 INCHES ABOVE THE GROUND. NO GOUGING IS ACCEPTABLE IN THE FLAT PORTION OF THE TUBE. GOUGES UP TO 0.020 ARE ACCEPTABLE IN THE BENT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.150 \pm 0.010$  IN THE FLAT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.15 \pm 0.030$  IN THE BENT PORTION OF THE TUBE.
5. ALL HOLES DRILLED ON CENTERLINES EXCEPT THOSE NOTED BY SECTIONS C-C, D-D AND F-F.
6. WELDING TO BE DONE PER DART QSI 004.
7. FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:  
MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
MINIMUM ULTIMATE TENSILE STRENGTH = 38 ksi
8. FINISH:  
ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.  
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
9. INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED IN D2750-1/2/3/4 WELDING DETAIL ON PAGE 4 AND 5. DRILL 'F' SIZE HOLES ( $\varnothing 0.297$ ) FOR WEARSHOE INSERTS.
10. D3488-041 (OR D3488-042) BLADE FITTING AND AN3C5A/AN3C7A WEARSHOE BOLTS TO BE INSTALLED USING SIKAFLEX-241 (OR EQUIVALENT) SEALANT.
11. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS POWDER COATING WITH MEK DEGREASER.

UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. *38463*

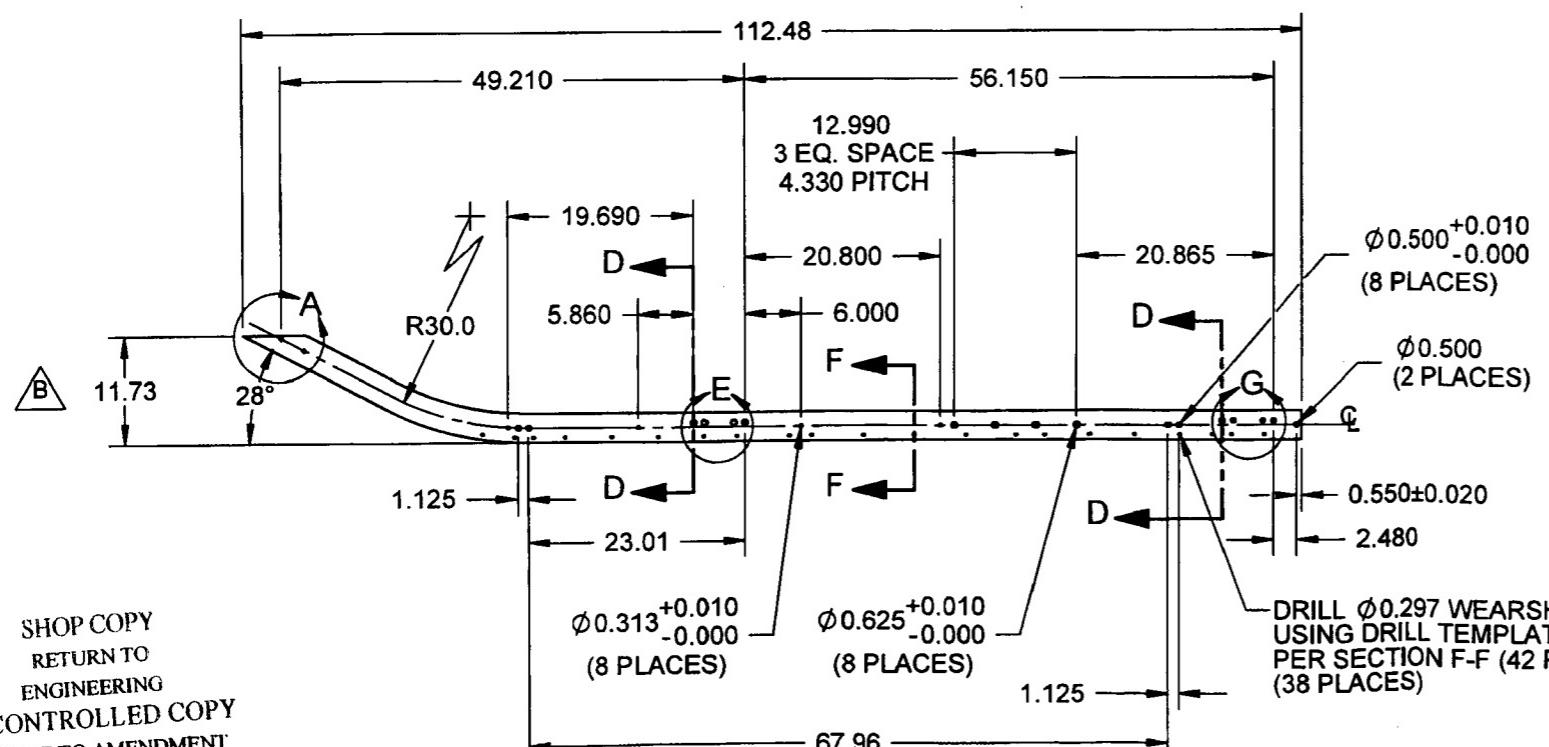
**COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

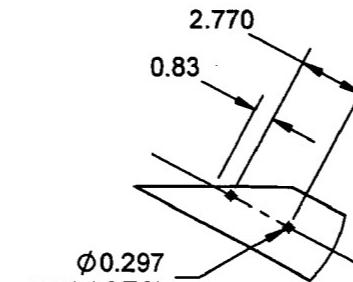
8



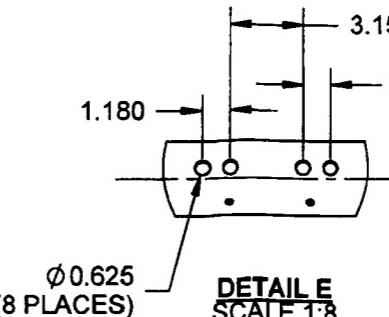
**D2750-1 LH SKIDTUBE (SHOWN)  
D2750-2 RH SKIDTUBE (OPPOSITE)**



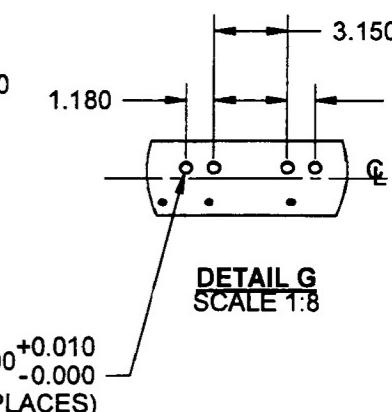
**D2750-3 LH SKIDTUBE (SHOWN)  
D2750-4 RH SKIDTUBE (OPPOSITE)**



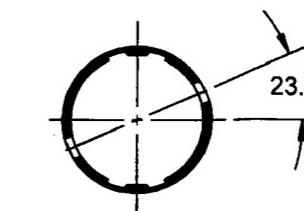
**DETAIL  
SCALE**



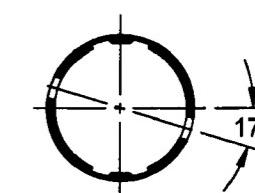
25  
(S) DETAIL  
SCALE 1



**DETAIL C**  
**SCALE 1:1**

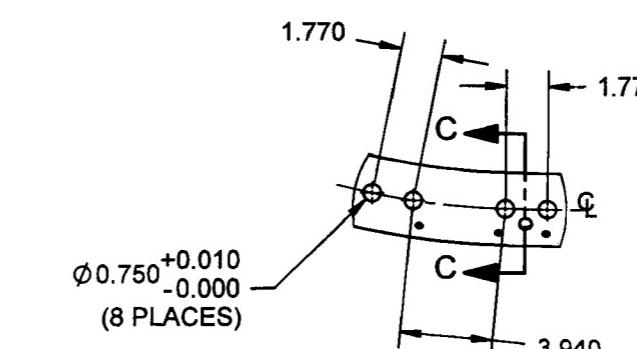


**SECTION C**  
**SCALE 1:4**

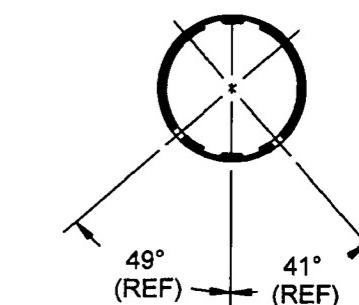


**SECTION D-I**  
**SCALE 1:4**

**RELEASE**  
07-08-02



**DETAIL B**  
SCALE 1:8  
(ALL DIMENSIONS ARE  
STRAIGHT LINE DIMENSIONS)

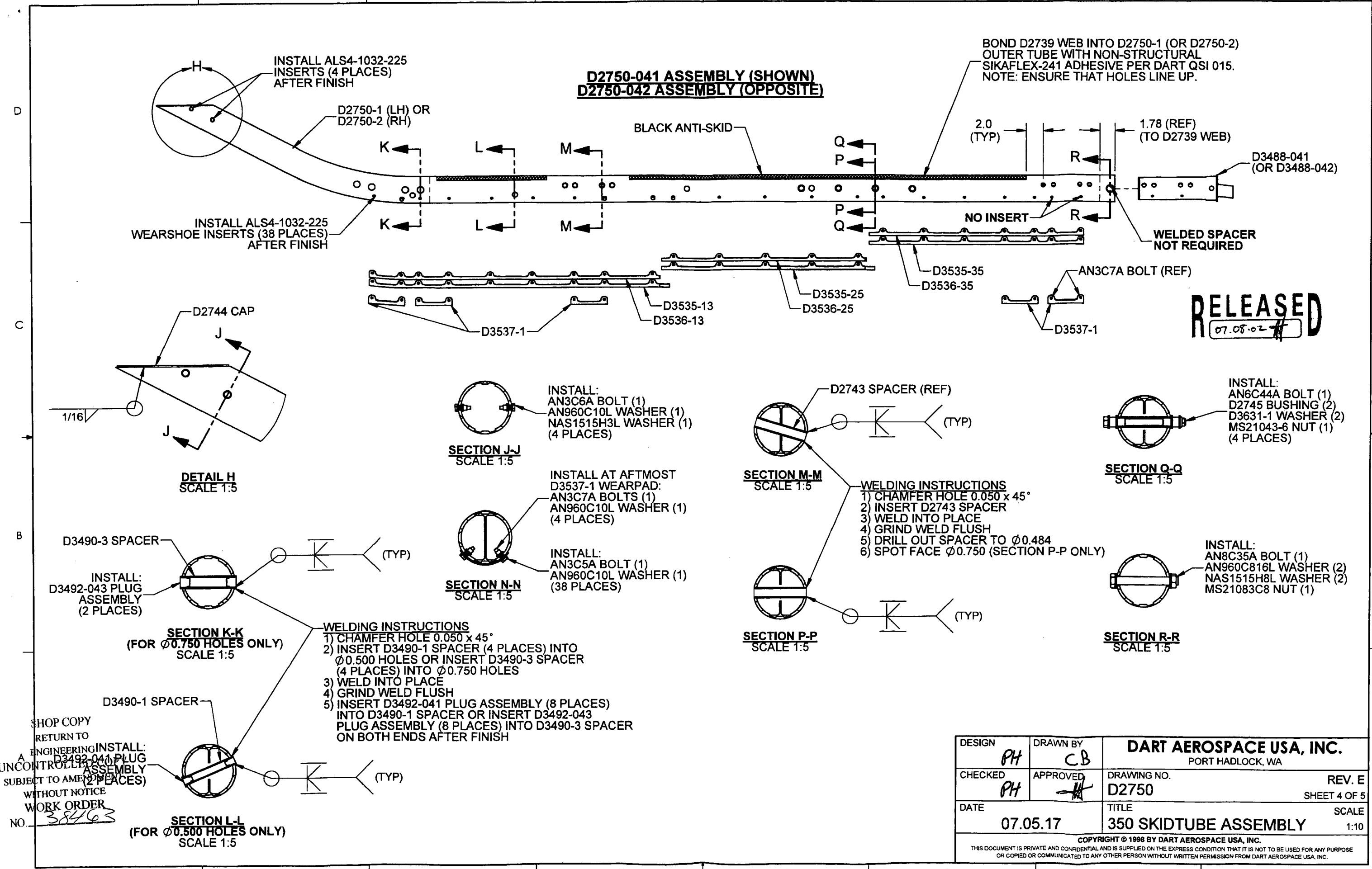


**SECTION F-1**  
**SCALE 1:4**

SHOP COPY  
RETURN TO  
ENGINEERING  
A UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 384163

DESIGN <i>PH</i>	DRAWN BY <i>CB</i>	DART AEROSPACE USA, INC. PORT HADLOCK, WA		
CHECKED <i>PH</i>	APPROVED <i>AA</i>	DRAWING NO. <b>D2750</b>	REV. E	SHEET 3 OF 5
DATE <b>07.05.17</b>	TITLE <b>350 SKIDTUBE ASSEMBLY</b>		SCALE <b>1:20</b>	
COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.				
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.				

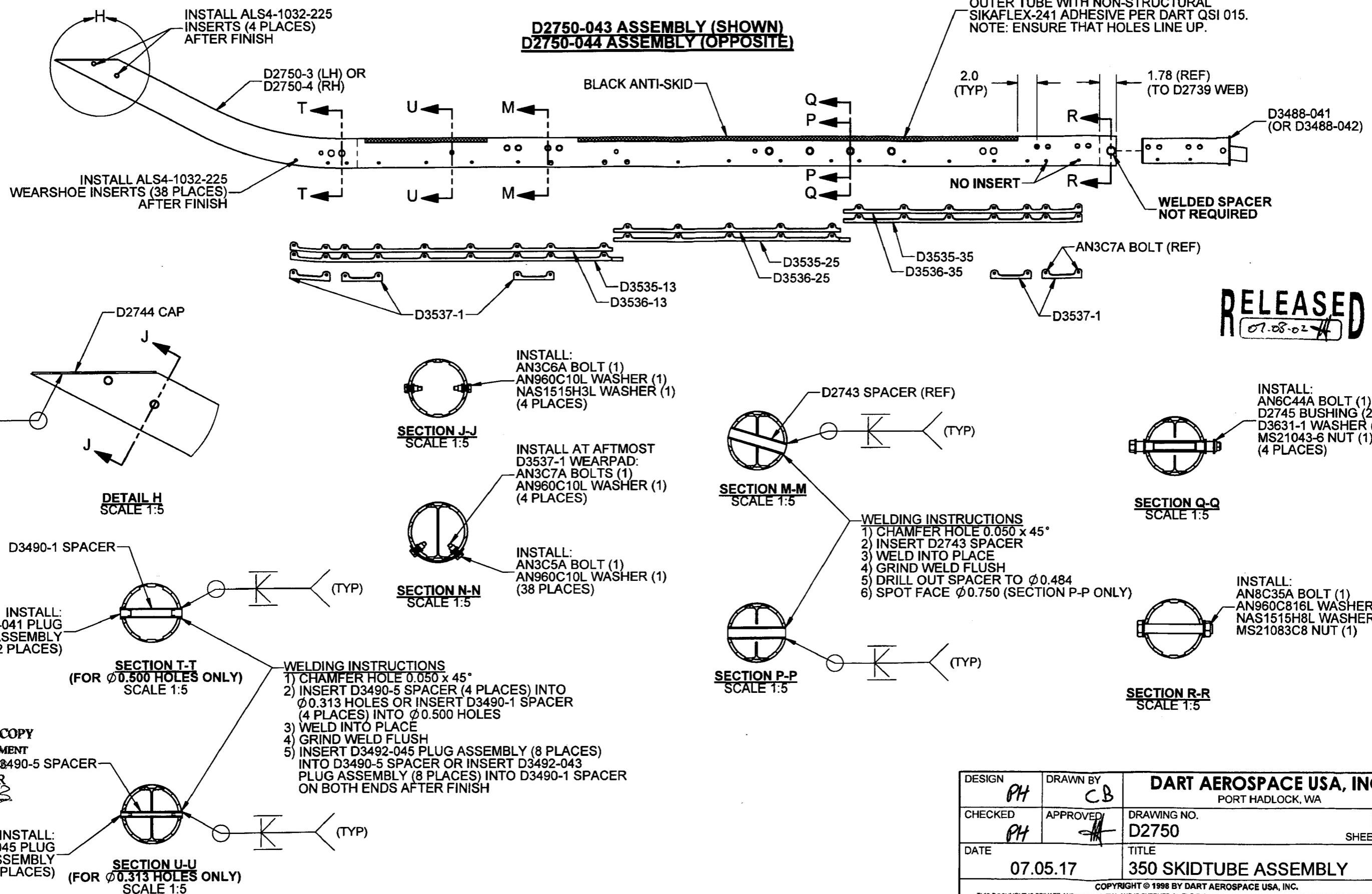
8 7 6 5 4 3 2 1



8 7 6 5 4 3 2 1

**D2750-043 ASSEMBLY (SHOWN)  
D2750-044 ASSEMBLY (OPPOSITE)**

BOND D2739 WEB INTO D2750-3 (OR D2750-4) OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015. NOTE: ENSURE THAT HOLES LINE UP.



DESIGN	PH	DRAWN BY	CB	DART AEROSPACE USA, INC.
CHECKED	PH	APPROVED		DRAWING NO. D2750
DATE	07.05.17			REV. E SHEET 5 OF 5
TITLE				SCALE 1:10

**COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.**  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.